

# TORREYA

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## THE FLORA OF COPAKE FALLS, N. Y.

BY SERENO STETSON

One hundred and five miles north of New York City, on the Harlem Division of the New York Central Railroad, lies the little town of Copake Falls (railroad station Copake Iron Works) in Columbia County, N. Y. Perhaps the location may be more readily brought to mind by saying that it lies just north of the point where New York, Massachusetts and Connecticut converge, and next the Massachusetts state line.

Its name is derived from the Indian, and when translated signifies "Great Barrier." This is most appropriate, for as one approaches the town from the "Flats" on the west, his attention is immediately attracted by the number of mountains seemingly piled together at this point; Mt. Washington, in Massachusetts, Mt. Elander, Cedar and Bash-Bish Mountains. These almost touch at their bases and form a gorge of exceeding beauty for a distance of three or four miles.

Bash-Bish Brook, which follows this gorge for its entire distance, has its origin in four or five spring-fed brooklets on the western slopes of Mt. Washington and enters the "Gap" in the form of a beautiful waterfall fifty feet in height, and plays an important part in the natural distribution of the plants.

The topographical features are many. On the north lies a plateau ranging from 950 to 1,100 feet above sea level. On the east and south lie the mountains before mentioned, and on the west the lowlands ranging 750 to 800 feet above sea level. The summit of Cedar Mountain, about 1,000 feet above the town, is swampy and furnishes, even during the driest season, numerous small "trickles" which eventually find their way into

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Bash-Bish. The western side of the town is dotted, here and there, with a number of treacherous bogs varying from one to ten acres in area. In these places many interesting forms of plant life are found while the vicinity of Bash-Bish Falls, to the east, abounds with rare ferns and mosses.\*

This area comes within the local flora and in visiting it two or three times yearly since the spring of 1904, the writer has noted the coming, now and again, of plants heretofore only found considerably to the east, in Massachusetts. This leads him to the belief that it is one of the points where plants find a natural crossing over the Taconic Mountains, and thus down into eastern New York helped along by Bash-Bish and Hillsdale (Jansen) Brooks.

The gap is winding, stretching from east to west, with the highest mountains on its southern side. This makes the location cool and moist, and it is not uncommon to find spring plants in bud and blossom after the summer has far advanced.

Some years ago, when the iron mines were in operation, the neighboring hills were practically denuded of their timber for use as supports in the shafts, and a second growth of formidable size stands in its place. Chestnut formed a good percentage of the lower level growths and yearly yielded large crops until the disease made its appearance some five or six years ago. Since then not enough nuts have been gathered to market and these beautiful trees, two to three feet in diameter, are now decaying masses. Pines, cedars, hickory, maples, oaks and large stands of white birch now form the major part of the woods, and great difficulty is experienced in keeping the latter from cleared farm land.

As a botanical hunting ground it is ideal. Numerous soil formations with a perfect water supply from innumerable small brooks make all forms of plant life possible, and the dry ridges on the northwest furnish specimens of stunted growth valuable for comparison. The following list, which excludes weeds, is by no means complete and is only intended to convey an idea of the flora.

\* The Rare Mosses of Bash-Bish Falls. Elizabeth G. Britton. TORREYA 1: 9. 1901.

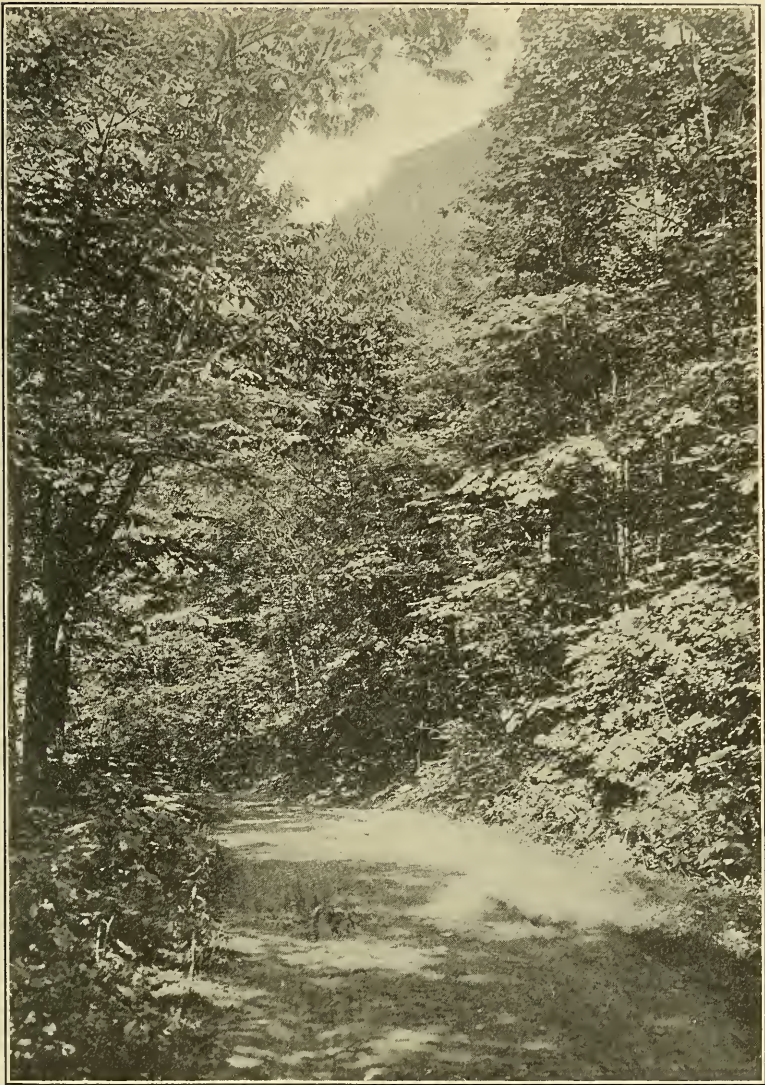


FIG. 1. Road through the gap, Cedar Mt. in the distance. *Gentiana quinquefolia* is found here. Copake Falls, N. Y.

## MONOCOTYLEDONES

*Typha latifolia* L.

*Typha angustifolia* L. Both of these are fairly numerous on the lower levels in usual surroundings. June, July.

*Arisaema triphyllum* (L.) Schott. In shaded localities immediately adjacent to brooks. Mostly on the lower levels. June, July.

*Symplocarpus foetidus* (L.) Nutt. Usual location and seasons.

*Erythronium americanum* Ker. In low shady woods, not common. May.

*Lilium philadelphicum* L. Solitary individuals growing in the high and dry portions of deciduous woods. Not common or found on the lower levels. Late July, August.

*Maianthemum canadense* Desf. Usual locations, fairly common. Late May.

*Oakesia sessilifolia* (L.) Wats. In roadside woods and thickets on lower levels. Late May.

*Polygonatum biflorum* (Walt.) Ell. In low damp woods, generally on slopes. May, June, with large fruits maturing late in September.

*Smilacina racemosa* (L.) Desf. Usual location, mostly along roads and trails. May, June. Fruits maturing late in August.

*Trillium erectum* L. Not rare. Blossoms late in May in usual locations., this year much earlier.

*Uvularia perfoliata* L. Late May, June, not common.

*Hypoxis hirsuta* (L.) Coville. Late May in usual locations.

*Iris versicolor* L. This plant is found only on the lowest level and is a continuation of the distribution which follows, in the water ways, adjacent to the Harlem Railroad track from New York City northward. Blossoms and fruits at the usual seasons.

*Sisyrinchium angustifolium* Mill. In long grass near borders of woods, dry location. July, August.

*Corallorrhiza maculata* Raf.

*Corallorrhiza trifida* Chatelain. These plants found only among rocks in damp, coniferous woods alongside of "trickles" and





FIG. 2. Junction of Bash-Bish and Cedar mountains. Note deciduous trees of Cedar Mt. and evergreen trees of Bash-Bish Mt. Copake Falls, N. Y.

not common. Both flower in July and August, their fruit maturing in late September and October.

*Cypripedium acaule* Ait. Only one colony known in the immediate vicinity. On hillside in dry deciduous woods at an altitude of 1,100 feet. July.

*Cypripedium pubescens* (Willd.) Knight. Scattered plants growing directly under low hanging branches of isolated conifers. Late June.

*Habenaria psycodes* (L.) Sw. In usual surroundings on lowest levels. August.

*Habenaria blephariglottis* (Willd.) Torrey. In usual surroundings on lowest levels. Late May, June. Both of these plants are only found in the boggy ground west of the railroad tracks and north of the station. Not common.

*Spiranthes gracilis* (Bigel) Beck. Up to a few years ago these plants were found in comparatively small numbers in the coniferous woods, blossoming during July and as late as October 21, at an altitude of 1,000 feet and over. Of late they appear to be migrating to the lower cleared levels to the west, increasing in height and numbers.

#### DICOTYLEDONES

*Claytonia virginica* L. Usual locations and seasons.

*Actaea alba* (L.) Mill. Usual season, roadsides and thickets.

*Anemone quinquefolia* L. In light woods during May and June.

*Anemonella thalictroides* (L.) Spach. Numerous in woods during May and June. Lower levels.

*Aquilegia canadensis* L. Found only out of the mountains in low, damp situations. June.

*Caltha palustris* L. Usual locations and seasons.

*Hepatica triloba* Chaix. Late April and May in high, semi-dry situations.

*Radicula Nasturtium-Aquaticum* (L.) Britten & Rendle. Cultivated but now wild in mountain brooklet. Altitude 1,200 feet. Blossoming in July.

*Sarracenia purpurea* L. In bogs on west side of railroad, very



FIG. 3. View from Lookout Rock. In the extreme distance are the Catskills. Copake Falls, N. Y.

numerous. Flowering at the usual time with fruit ripe in late September.

*Drosera rotundifolia* L. Inactive; found only in low ground, not common. July.

*Mitella diphylla* L. In roadside woods and along trails throughout the vicinity. May, June.

*Parnassia caroliniana* Michx. Found in large numbers throughout the boggy land to west of railroad. Late August, September.

*Saxifraga virginiana* Michx. Usual location and season.

*Hamamelis virginiana* L. Found mostly on the higher ridges and in semi-dry locations. Usual seasons.

*Fragaria vesca* L. Abundant on the lower levels. Flowering at the usual season.

*Potentilla argentea* L. Usual location and seasons.

*Potentilla canadensis* L. Usual location and seasons.

*Potentilla canadensis* var. *simplex* (Michx.) T. & G. Usual location and season.

*Potentilla fruticosa* L. Found only on sunny, exposed portions of plateau to the north of "Gap." July, August.

*Prunus serotina* Ehrh. On exposed ridges and borders of woods, not frequent.

*Rubus odoratus* L. Common, along roads and trails in damp hillside-woods. Generally those with southern exposure. July.

*Spiraea tomentosa* L.

*Spiraea latifolia* Borkh. Open exposed ground on the lower levels. July, August.

*Desmodium nudiflorum* (L.) DC.

*Desmodium paniculatum* (L.) DC. Along roadsides through woods. Generally in rocky places. August, September.

*Lespedeza frutescens* (L.) Britton. Usual locations. August.

*Geranium maculatum* L. Usual locations. May.

*Geranium Robertianum* L. Rare, only once collected in damp, wet, sunless location, Sept., 1911. In fruit. Altitude 920 feet.



- Polygala paucifolia* Willd. Numerous on wooded slopes, especially those with northern exposure.
- Celastrus scandens* L. Found occasionally. Usual locations and seasons.
- Impatiens biflora* Walt. In quantities at foot of Bash-Bish falls and like situations, blossoming at the usual time.
- Hypericum perforatum* L. Common in sunny, exposed situations, in blossom at usual time.
- Epilobium angustifolium* L. In low, wet ground. August, September.
- Oenothera biennis* L. Usual location on lower levels. July, August.
- Aralia nudicaulis* L. In woody ravines adjacent to brooks. June.
- Panax trifolium* L. In damp woods. May.
- Cornus florida* L. Good sized trees, fairly common on the lower levels in damp situations. May. The common name of "dogwood" is rarely heard in this vicinity among the natives. It is almost invariably referred to as "shadblow." This, I am told, because of its "blowing" about the time that the shad make their appearance in the Hudson River. It must therefore have originated among the fisher-folk of the Hudson region many years ago.
- Gaultheria procumbens* L. Fair-sized colonies throughout the coniferous parts of the woods. July, August. Fruiting in October.
- Kalmia latifolia* L. Great numbers in past years, but rapidly thinning, due to tourists. July, fruiting in October.
- Monotropa uniflora* L. Not common, generally in low coniferous woods. July.
- Pyrola elliptica* Nutt. In low, damp woods. Common. July, fruiting in September.
- Rhododendron nudiflorum* (L.) Torrey. On the higher levels, generally along trails and wood roads. Perfume intense. Altitude 1,000 ft. and over. Profusely blooming in May.
- Lysimachia quadrifolia* L. Usual locations. June, July.



FIG. 4. View looking up the gap, Bash-Bish Mt. in the distance, evergreens predominating. Copake Falls, N. Y.

*Trientalis americana* (Pers.) Pursh. Good-sized colonies in deep, damp woods on border of Cedar brook. May.

*Gentiana Andrewsii* Griseb. Common in low, wet ground. August.

*Gentiana quinquefolia* L. Not common but increasing in numbers yearly, spreading westward in semi-dry, shaded locations. September.

*Cuscuta arvensis* Beyrich.

*Cuscuta Coryli* Engelm. In open, damp situations on *Aster* and *Solidago*.

*Myosotis scorpioides* L. In low, wet, unshaded ground, not frequent. July.

*Verbena hastata* L. Common in usual locations.

*Collinsonia canadensis* L. Rank weed in low, shaded places. September.

*Monarda didyma* L. Along Bash-Bish brook, not common. August.

*Monarda fistulosa* L. Large, scattered groups on dry, sandy, exposed hillsides. This plant is apparently new to this locality and appears to be spreading to the westward. September.

*Physostegia virginiana* (L.) Benth. This plant has newly arrived (1912). Some years ago the writer found it considerably to the eastward. Its present location in a small mountain meadow made marshy by the partial damming of a small brook by *Radicula*, which had formerly been in cultivation but now a rank growth. This brook has its source in the vicinity where the plant was first found. August. Large colony.

*Pycnanthemum flexuosum* (Walt.) B.S.P. Growing along roadside on steep, sandy banks. September.

*Scutellaria lateriflora* L. Wet, shady places. September.

*Chelone glabra* L. In wet shady places along brooks. The fact of a brook drying up does not appear to arrest development. August, September.

*Gerardia flava* L.

- Gerardia pedicularia* L. These frequent the trails in the lower woods, not numerous, but increasing in numbers. August.
- Gerardia tenuifolia* Vahl. Appears in large numbers in the deep grass of old fields in exposed locations. August, September.
- Linaria canadensis* (L.) Dumont. In dry, sandy places. August.
- Linaria vulgaris* Hill. There is only one station in the mountains with which the writer is acquainted. It is situated on the banks of a cold spring-fed brooklet and assumes large proportions. A specimen of inflorescence in the writer's herbarium was obtained from a plant 1.9 m. in height.
- Mimulus ringens* L. Along Bash-Bish and other brooks, in low, shady situations. August.
- Veronica americana* Schwein. Near or in mountain brooklets. July.
- Orobanche uniflora* L. Damp woodlands. May, June.
- Campanula rotundifolia* L. This plant is found in the rocky, cool places along the brooks and blooms later than usual continuing into late October. The basal leaves are very persistent and specimens collected throughout the season will almost invariably bear the round-cordate basal leaves.
- Lobelia cardinalis* L. Along the brooks, not common. August. September.
- Lobelia inflata* L. Frequent in low, damp woods. September, October.
- Lobelia spicata* Lam. Mostly found in long grass adjacent to woods. Seems to prefer sandy soil. August, September.
- Anaphalis margaritacea* (L.) B. & H. Exposed, dry hillsides. August.
- Aster divaricatus* L. Woods, common. August.
- Aster dumosus* L. Woods, common. August.
- Aster ericoides* L. Roadsides, common. August.
- Aster Novi-Belgii* L. Lower levels, near water. October.
- Aster patens* Ait. Dry woods, common. October.
- Aster prenanthoides* Muhl. Damp woods. September.
- Aster sagittifolius* Wedeæmeyer. Wood roads, trails, etc. October.



- Aster Tradescanti* L. Common on low levels. September, October.
- Aster undulatus* L. On upper levels in dry woods. October.
- Erigeron pulchellus* Michx. Not common, woods. May.
- Erigeron ramosus* (Walt.) B.S.P. Fields and roadsides, common. July, August.
- Eupatorium perfoliatum* L. Not common, on lower levels near brooks. August, September.
- Eupatorium purpureum* L. Roadsides and thickets in lower levels. September.
- Eupatorium urticaefolium* Reichard. Growing usually with *E. perfoliatum*, but also found occasionally on higher ground. August, September.
- Gnaphalium polycephalum* Michx.
- Gnaphalium purpureum* L. In open dry locations. September, October.
- Helianthus decapetalus* L. Bordering brooks in low, damp woods. September.
- Hieracium scabrum* Michx. Not common, dry localities. August.
- Solidago arguta* Ait. Roadsides and fields. August, September.
- Solidago bicolor* L. Common in woody paths. August, September.
- Solidago erecta* Pursh. Dry hillside. August, September.
- Solidago graminifolia* (L.) Salisb. Moist woods near roads. August.
- Solidago hispida* Muhl. Dry, rocky woods. August.
- Solidago squarrosa* Muhl. Rocky woods. September.
- Tussilago Farfara* L. In roadside trickles, spreading of late noticeably. May.
- NEW YORK.

## LICHENS FROM JAVA

BY G. K. MERRILL

The lichens here listed were collected by Mr. Max Fleischer in various localities of Java, and submitted to the writer for identification. The material proved of much interest from containing several rare and little known species.